

R4-2400-4 (2/99)

[illegible]

4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
						TOTAL ALL PLOTS												
						TOTAL PER ACRE												

Quality Thinning

Calculations:

$$1.00 \frac{\text{COL. (6)} + \text{COL. (7)}}{\text{COL. (3)} + \text{COL. (4)} + \text{COL. (8)}} \times 100 = \% \text{ Quality Thinning}$$

TOTAL PER ACRE CALCULATIONS: TREES PER ACRE = "TOTAL ALL PLOTS" in column divided by total of plots, then multiplied by reciprocal of plot size.

NOTES

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1. ** = Species of trees ignored in thinning activity.
2. If species of trees is needed, record species for each tree tallied in Column (2).

TREE EVALUATION CODING AND INSTRUCTIONS

ACCEPTABLE TREES and CREDITS FOR NON STOCKED SPOTS (3-5) CATEGORY "C" TREES (9)

S1 - Meets all specifications and species preference
S2 - Tree meeting maximum d.b.h. cut limit
S3 - Credit leave tree due to insufficient original stocking
S4 - Credit for missing tree cut due to insects and disease

C1 - Not completely severed from stump
C2 - Hand-up tree
C3 - High stump
C4 - Tree left with excess damage
C5 - Tree left with excess disease
C6 - Tree not girdled
C7 - Tree improperly girdled

CATEGORY "A" TREES (6) AND (7)

A1 - Improper spacing relationship or too many cut
A2 - Tree cut exceeds the maximum d.b.h. cut limit
A3 - Leave tree damaged excessively by salvage or felling operations
A4 - Improper tree selection (does not meet specification)
A5 - Wrong tree cut

CATEGORY "B" TREES (8)

B - Improper spacing or too few trees cut (Excess Trees)
B1 - Stump with live limbs

INSTRUCTION 1. The sum of Columns (3) and (4) cannot exceed maximum acceptable trees per plot.
NS:

2. If the total of Col. (3) and Col. (4) is less than the minimum acceptable trees per lot and there are no improperly cut trees (Col. 6 and 7 -Category A), Column 4 must be increased to the extent the total of Col. (3) and Col. (4) equals the average number of acceptable trees per plot. If trees are improperly cut (Category A) the total of Columns 3 and 4 must not exceed the sum of maximum acceptable trees per plot minus the number of Category A trees (Columns 6 and 7).

ADDITIONAL
NOTES:

Section J - Exhibit _____ (cont) - Thinning Inspection Plot Form and Instructions

INSTRUCTIONS - THINNING PLOT INSPECTION FORM R4-2400-4 (12/97)

1. Use Form 2400-4 to record the results of thinning. This form is designed for daily use to ascertain the thinning quality thinning.
2. Most of the items contained in the heading of the form can be obtained from prescription or contract. Instructions for the use of the form are as follows:

FORM HEADER

- a. ID Block. Complete all items prior to inspection.
- b. Contract Block. Complete all items prior to inspection. The percent work accomplished should be calculated by the following formula:

$$1.00 - \frac{\text{acres thinned to date}}{\text{total contract acres}} \times 100 = \text{Percent Work Remaining}$$

- c. Contract Specifications Block.

(1) Acceptable Minimum and Maximum Trees per Acre. This information is provided in the Silvicultural Summary Prescription as acceptable stocking density. A specific range of leave trees is specified and then becomes the basis for the timber stand improvement treatment. Trees below minimum height for thinning and any species to be ignored from thinning are excluded.

(2) Priority Species Preference. List the priority of species to be retained from the "Silvicultural Summary Prescription"

(3) Plot Size. Record the plot size. The selected size should be large enough to sample at least 4 to 6 trees based on the expected average prescribed stocking. Plot size is specified in the contract or determined by the Contractor. The same plot size must be used on the entire unit. Utilize larger plots when variability in stand density exists and it is desired to maintain that density.

(4) Acceptable Trees per Plot. The acceptable trees per plot are calculated from the acceptable minimum/maximum trees per acre. For example, if the range were set at 250 to 350 trees per acre the average spacing would be 12 feet (300 trees per acre). Round the spacing to the nearest whole foot if needed. Select the plot size to be used, for example 1/100 ac, 1/50 ac, and 1/20-acre plot. Divide the plot reciprocal into the lower and upper range of trees per acre to determine the range of acceptable trees per plot. Assuming a 1/100-acre plot and acceptable range of leave trees to be 250 to 350 trees per acre, the following calculations would be made. (250/50= 5 trees per plot; 350/50= 7 trees per plot). In this case the range would be 5 to 7 trees per plot. If a 1/20 acre plot was selected

the range would be 13 to 18 trees per plot. ($250/20= 12.5$ trees per plot rounded to 13; $350/20= 17.5$ trees per plot, rounded to 18). The specified range allows for varying the spacing on poorly stocked plots to retain the desired crop trees (Best Trees) per plot yet does not permit excessive numbers of trees to be left voiding the purpose of the thinning treatment.

(5) Variation of Spacing. Variation of spacing is described as a percentage of average spacing or as a specified measured distance between acceptable leave trees. Provided in prescription

(6) Species Ignored. Tree species that are not to be cut and are ignored in the thinning activity. These trees are not evaluated within the calculation for thinning quality. Refer to prescription.

(7) Minimum Cut Tree Height. Enter the minimum cut tree height specified in the prescription and/or contract. Trees at or below this height are not required to be cut.

(8) Maximum Cut Tree Diameter Breast height (DBH). Enter the maximum tree size to be cut. Cutting trees larger is a violation.

(9) Acceptable Category "C" Trees per Acre. Enter the acceptable number of Category "C" Trees per acre specified in the contract/prescription. .

d. Stand Sum. The block is for Stand Summary data and is used to record the average target stand and actual stand resulting from the thinning activity. All numbers are expanded in terms of trees per acre. Information can be used to update site/stand information in databases, reporting accomplishments, and certifying accomplishments. The Contractor is not required to fill in this block however it provides useful information for evaluating effectiveness of the treatment.

(1) Trees Left per Acre. The target number of tree per acre is the average trees per acre. Actual trees per acre are computed from column 3.

(2) Category "C" Trees per Acre. The target number of Category "C" Tree per acre comes from the silvicultural prescription and/or thinning contract. The actual number of Category "C" Trees is computed from column 9.

(3) Surplus and ** Trees per Acre Ignored. The estimate of trees to be ignored by species and expected surplus trees can be derived from the silvicultural prescription. Actual numbers of trees per acre can be computed from column 5.

(4) Trees per Acre below Minimum Height. A target estimate for trees not included for thinning that are below a minimum height can be found in the silvicultural prescription. The actual number of trees per acre can be computed from additional plot information taken during the thinning plot inspections.

INSPECTION

e. Plot Number - Column (1). Enter the plot number.

f. Tree Evaluation - Column (2). Utilize the backside of Form 2400-4 as a reference for tree evaluation codes. Enter the tree evaluation codes for all trees found on the inspection plot that are to be used for determining thinning quality. The codes describe tree characteristics, i.e. acceptable trees, credits for non-stocked spots, Category "A", "B", and "C" trees.

If required by the contract, record the tree species below the tree evaluation code utilizing two lines per plot.

g. Trees Left - Column (3). Enter the total of all acceptable trees (S1's) and trees exceeding the maximum DBH cut limit (S2's). If there are surplus (S2) tree(s) they will need to be recorded in Column (5). Surplus trees can be determined after data for Columns (3) and (4) has been recorded. If the sum of Columns (3) and (4) exceeds the maximum acceptable trees per plot Column (3) or (4) must be reduced to equal the maximum acceptable number of trees per plot. A reduction of Column (3) due to surplus (S2) trees must be included in Column (5).

If the sum of Columns (3) and (4) are less than the minimum acceptable trees per plot Column (4) must be increased via (S3) credit for insufficient original stocking.

h. Credit Non-stocked Spots - Column (4). Record the number of non-stocked spots (S3) and credit for missing tree(s) cut due to insects, disease, and/or damage (S4).

i. Surplus S2 and ** Trees - Column (5). Enter the extra (S2) trees from Column (3) and ** (number of trees ignored).

j. Category "A" Trees - Columns (6) and (7). Enter the number of improper leave trees selected (A1, A2, A3) and wrong trees cut (A4, A5).

k. Category "B" Trees - Column (8). Enter the number of excess trees (B,B1).

l. Category "C" Trees - Column (9). Enter the number of trees that meet evaluation codes (C1-C7).

m. Percent (%) Quality Thinning. Compute the quality of thinning based on the sum of columns 3 through 8. The following formula is to be used.

$$1.00 - \frac{\text{Col 6} + \text{Col 7} + \text{Col 8}}{\text{Col. 3} + \text{Col. 4}} \times 100 = \text{Percent Work Remaining}$$

(rounded up to whole no.)

n. Category C trees. Determine if the number of Category C trees are within the contract allowance.

$$\text{Cat C trees per acre} = \frac{\text{Total Col. 10}}{\text{plot size}} \times \text{reciprocal of plot size}$$

No. of plots

Compare these results with the maximum allowed specified in the contract

Contractor must sign and date the inspection and confirm that information is accurate.